

# BIOL 5P95 MSc Research Seminar

Ian Gordon, Brock Library Teaching & Learning Librarian



An update about the library, databases, and strategies to remain current. This will involve gaining feedback on AI-assisted resources, and other text- and bioscience-based open and proprietary resources.

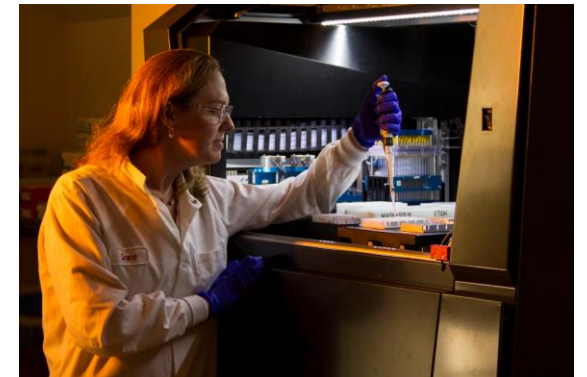


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# Library Seminar Agenda

- What's new in the Library
- Brock Biological Science Library Research Guide
- Databases – lots of them
- Research Metrics
- Citation Management tools
- Where, how and when to get help!

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| Archives & Special Collections | 9:30am – 4:30pm |
| Makerspace                     | 10am – 4pm      |
| Map, Data & GIS Library        | 9am – 4pm       |
| Ask Us Chat                    | 10am – 10pm     |

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Teaching & Learning Librarian



## Ian Gordon

### Teaching & Learning Librarian (Librarian III)

Applied Health Sciences, Mathematics & Science



Ian Gordon (he/him/his)

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**Phone:** 905 688 5550 x3727

**Email:** [igordon@brocku.ca](mailto:igordon@brocku.ca)

[Book a Consultation](#)

Ian Gordon is a member of the Brock Library Teaching & Learning Team. Ian's interests include STEM teaching, information seeking, and providing one-on-one assistance for the Faculty of Mathematics and Science, Faculty of Applied Health Sciences, and all points in between. Book a [research consultation](#) to work through an idea, get help searching the literature, exploring an idea, or learn something new together.

#### Publications and collections

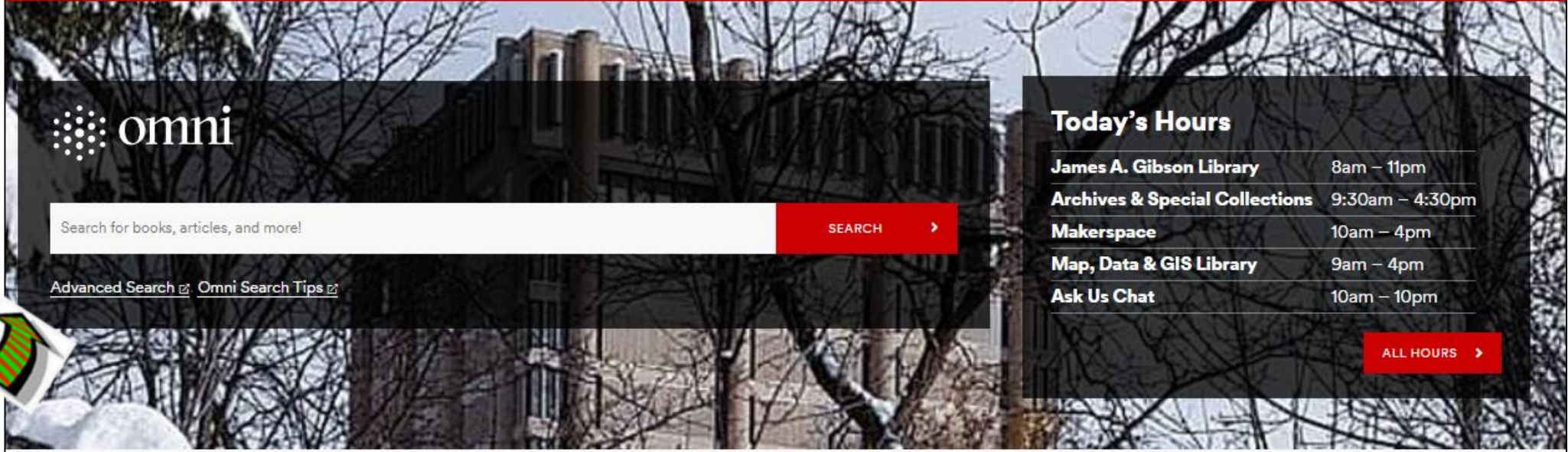
- Ian D. Gordon ORCID database record @ <https://orcid.org/0000-0003-1128-3301>
- Vamos, S., Vine, M., Alaimo, D., & Gordon, I. D. (2024). Health literacy in patient-physician communications: A scoping review. *Health Behavior and Policy Review*. (in press)
- Gordon, I. D. (2023, June 14). Subject Librarianship vs Functional Teams in Academic Libraries. *InsideOCULA Open Shelf*. <https://open-shelf.ca/subject-librarianship-vs-functional-teams-in-academic-libraries-questions-to-ask/>
- Gordon, I. D., Galbraith, B. J., & Savino, C. Defining 'cool climate' research: A bibliographic analysis. (2022) *ICCWS Symposium* Poster, Brock University, co-presenter, July 17-21, 2022. <https://archive.org/details/gordon-galbraith-savino-defining-cool-climate-research-a-bibliographic-analysis-/mode/1up>
- Gordon, I. D., Chaves, D., Dearborn, D., Hendrix, S., Hoffmann, K., Hutchinson, R., Popovich, C., & White, M. (2022). Information seeking behaviors, attitudes, and choices of academic physicists. *Science & Technology Libraries*. doi:10.1080/0194262X.2021.1991546



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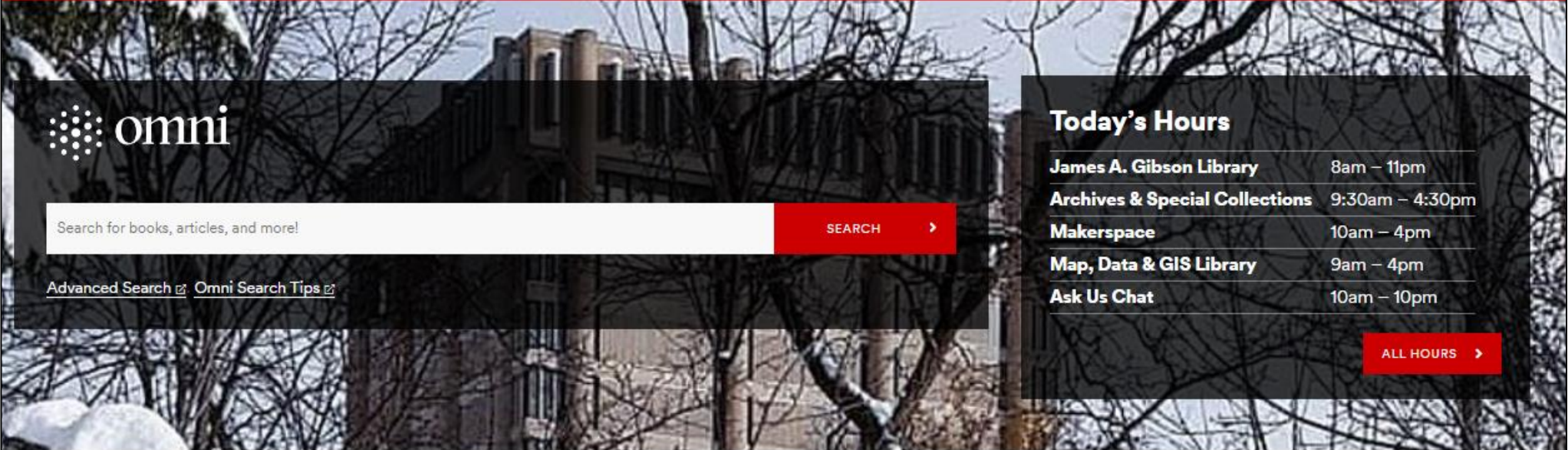
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- [Brock Biological Science Library Research Guide](#)
- Databases – lots of them
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- Where, how and when to get help!

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## What is this guide for?

This guide has been designed as a general program guide and is curated by [Brock librarians](#). It features links to most often used resources such as databases for books, peer-reviewed journal articles, theses, dissertations, open educational resources (OEDs), patents, standards, and more. Use the tabs on the left to navigate through the web page.

Selective course-related guides are provided when appropriate every term.

BIOL 5P95 Winter 2024 ppt [slides](#) (PDF)



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## Concepts of Biology, 1st Canadian Edition

Charles Molnar and Jane Gair

Date Published: 2015

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In this survey text, directed at those not majoring in biology, we dispel the assumption that a little learning is a dangerous thing. We hope that by skimming the surface of a very deep subject, biology, we may inspire you to drink more deeply and make more informed choices relating to your health, the environment, politics, and the greatest subject that are...

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## Chapter 3: Introduction to Cell Structure and Function

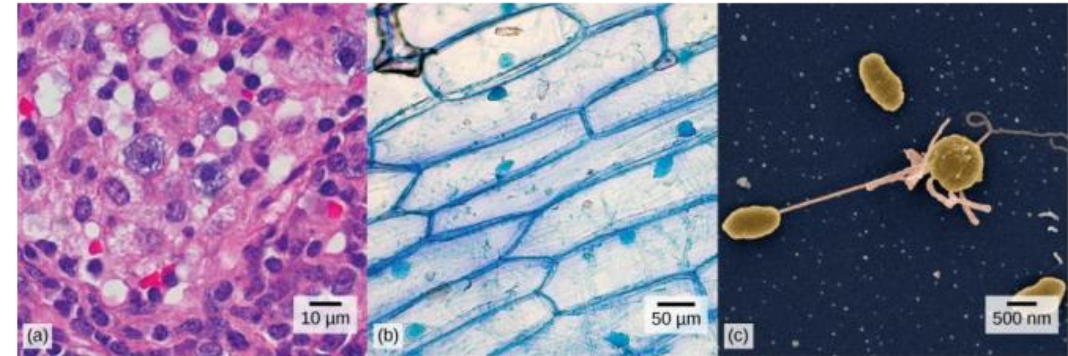


Figure 3.1 (a) Nasal sinus cells (viewed with a light microscope), (b) onion cells (viewed with a light microscope), and (c) *Vibrio tasmaniensis* bacterial cells (viewed using a scanning electron microscope) are from very different organisms, yet all share certain characteristics of basic cell structure. (credit a: modification of work by Ed Uthman, MD; credit b: modification of work by Umberto Salvagnin; credit c: modification of work by Anthony D'Onofrio; scale-bar data from Matt Russell)

Close your eyes and picture a brick wall. What is the basic building block of that wall? It is a single brick, of course. Like a brick wall, your body is composed of basic building blocks, and the building blocks of your body are cells. An average human is thought to have 37.2 trillion cells.

Your body has many kinds of cells, each specialized for a specific purpose. Just as a home is made from a variety of building materials, the human body is constructed from many cell types. For example, epithelial cells protect the surface of the body and cover the organs and body cavities within. Bone cells help to support and protect the body. Cells of the immune system fight invading bacteria. Additionally, red blood cells carry oxygen throughout the body. Each of these cell types plays a vital role during the growth, development, and day-to-day maintenance of the body. In spite of their enormous variety, however, all cells share certain fundamental characteristics.

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# Theses & Dissertations

## What is this guide for?

Theses and dissertations are extended scholarly essays that incorporate **original** research on a specific topic. They are usually written as part of the requirements for a graduate degree (e.g. MA or PhD).

This guide includes information about how to locate print and electronic theses or dissertations produced by students at Brock University as well as those produced by students at other institutions, both in Canada and internationally.

## Why use Theses and Dissertations?

Theses and dissertations can be a valuable source of information for research. Theses and/or dissertations contain:

- original research
- extensive bibliographies
- thorough literature reviews
- emerging trends and voices
- datasets or surveys



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### Evaluating and targeting mitochondrial dynamics and plasticity in conditions of mitochondrial dysfunction

Bagshaw, Olivia Rita Marie; Department of Biological Sciences

Mitochondria represent dynamic structures which undergo various changes in morphology in order to rapidly respond to changes in cellular physiology. Changes in mitochondrial dynamics are observed in various pathological events and represent a potential target for therapeutics. In this thesis, I first investigated the role of zinc sup



### AN EXAMINATION OF NOTCH SIGNALLING IN THE REGENERATING SPINAL CORD OF THE AXOLOTL, *Ambystoma mexicanum*: ESTABLISHMENT AND CHARACTERIZATION OF AN AXOLOTL OPTOGENETIC CONSTRUCT FOR UPREGULATION OF NOTCH1 SIGNALLING IN VIVO.

Lee, Jacob; Department of Biological Sciences

The Notch signalling pathway is a juxtacrine signalling pathway conserved across vertebrate and invertebrate species and is known to be a potent regulator of progenitor cell fate decisions during nervous system development. The dysregulation of the Notch pathway has been implicated in the establishment of an anti-neurogenic env



### Identification of clone x rootstock effects on cold hardiness and relevant dehydrins changes in Cabernet franc (*Vitis vinifera* L.)

Zhang, Linxue; Department of Biological Sciences

Cold injury can harm grapevines and severely reduce yields in cool-climate regions. Previous studies indicate bud cold hardiness differences among *Vitis vinifera* cultivars, but comparatively, little attention has been given to the effect of clone and rootstock. This study investigates the bud cold hardiness of Cabernet franc with different cl



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Author: Özmen, Canan Yüksel [claim]

Description: Grape (Vitis vinifera L.), shows relatively high tolerance to drought stress. Phylloxera (Phylloxera vastatrix radialis) damage made the use of insect-resistant **rootstocks** necessary in many areas of grape cultivation. However, although Vitis...

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**ANALYSIS OF POINT MUTATIONS IN  
INDIVIDUALS EXPOSED TO IONIZING RADIATION**

ADONIS SKANDALIS

A thesis submitted to the Faculty of Graduate Studies  
in partial fulfillment of the requirements for the degree of

Doctor of Philosophy

Graduate Program in Biology  
York University  
North York, Ontario

June 1993

Skandalis, A. (1993). *Analysis of point mutations in individuals exposed to ionizing radiation* [Doctoral dissertation, York University].



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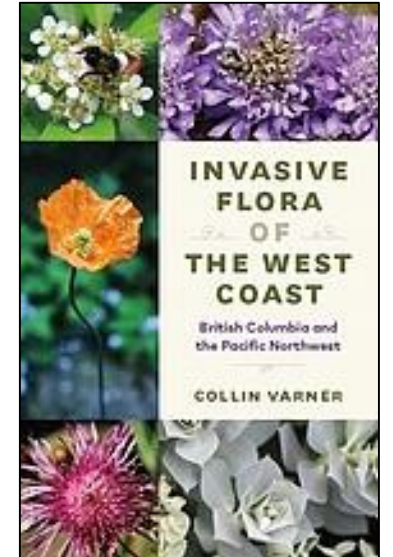
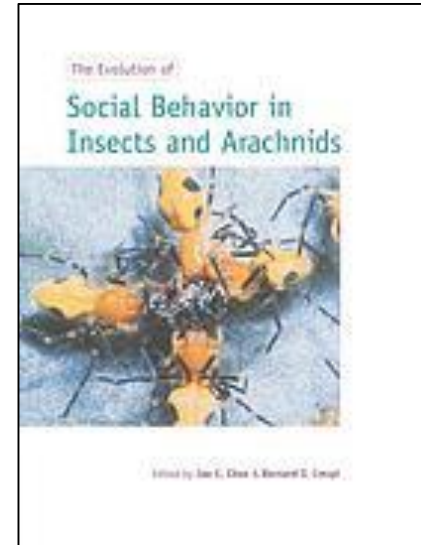
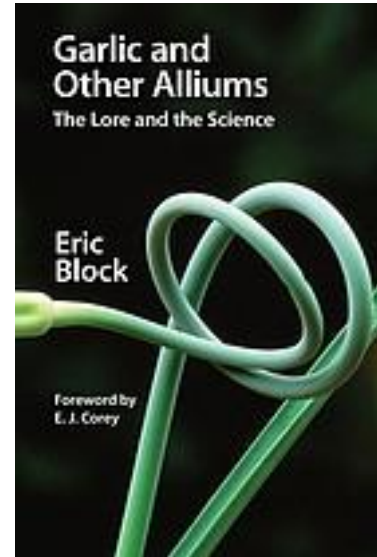
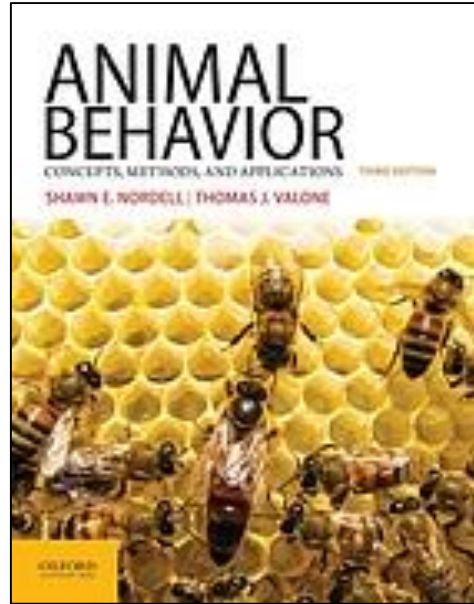
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Qualitative methodologies, particularly visual methods, have been instrumental in understanding children's play experiences (Meire, 2008; Anthamatten, 2013). These methods have been used to explore children's perceptions of play, with a focus on unstructured play and the family and school (Anthamatten, 2013). They have also been employed to examine the determinants of independent active free play, revealing the impact of child characteristics, neighborhood and physical environment, societal changes, and policy (Lee, 2015). However, there is a need for more detailed reporting of methodological details and improved theoretical sophistication in this area of research (Lee, 2015).

### Qualitative Research on Children's Play A review of recent literature

 J. Meire

2008 46 citations

### Literature Review on Qualitative Methods and Standards for Engaging and Studying Independent Children in the Developing World

 S. Aitken +1

2009 26 citations DOI 

### Exploring children's perceptions of play using visual methodologies

 Peter Anthamatten +2

2013 10 citations DOI 

### A meta-study of qualitative research examining determinants of children's independent active free play

 Homan Lee +5

 International Journal of Behavioral Nutrition and Physical Activity

2015 76 citations DOI 

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## Genetic expression of foraging behaviors by bees

**Reproductive ground plan may mediate colony-level selection effects on individual foraging behavior in honey bees.**

G. Amdam G. Amdam K. Norberg M. Fondrk R. Page Biology, Environmental Science ·

[Proceedings of the National Academy of Sciences...](#) · 3 August 2004

**TLDR** It is document that the pleiotropic **genetic** network that controls **foraging** behavior in functionally sterile honey bee workers (*Apis mellifera*) has a reproductive component and suggests that exploitation of this ground plan plays a fundamental role in the evolution of social insect societies. [Expand](#)

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**Behavioral genomics of honeybee foraging and nest defense**

G. Hunt G. Amdam +11 authors R. Page Biology, Environmental Science · [Die Naturwissenschaften](#) ·

15 December 2006

**TLDR** These studies are the first step in linking natural variation in honeybee social behavior to the identification of underlying genes. [Expand](#)

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**Behavior-specific changes in transcriptional modules lead to distinct and predictable neurogenomic states**

Sriram Chandrasekaran S. Ament +4 authors G. Robinson Biology, Environmental Science ·

[Proceedings of the National Academy of Sciences...](#) · 29 September 2011

Using brain transcriptomic profiles from 853 individual honey bees exhibiting 48 distinct **behavioral** phenotypes in naturalistic contexts, we report that **behavior-specific** neurogenomic states can be...

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## Costs and benefits of maternal nest choice: tradeoffs between brood survival and thermal stress for small carpenter bees

JL deHaan

J. Marezki

A. Skandalis

GJ Tattersall

MH Richards

Biology, Environmental Science ·

[bioRxiv](#) · 2 December 2022

**TLDR** The results highlight a tradeoff between maternal benefits and offspring costs when mothers choose nest sites, in which maternal fitness is enhanced by nesting in sun, despite significant physiological costs to offspring, due to the necessity for thermoprotective responses. [Expand](#)



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## Foraging gene expression patterns in queens, workers, and males in a eusocial insect

D. Awde

A. Skandalis

M. Richards

Biology · 22 October 2021

Reproductive division of labour is based on biased expression of complementary parental behaviours, brood production (egg-laying) by queens and brood care (in particular, brood provisioning) by wor...



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ScienceDirect.com

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## Evolution: How sweat bees gained and lost eusociality

by KD Lacy · 2023 — A comparative genomic study of **sweat bees** points to a familiar factor a regulator of **behavioral** specialization: juvenile hormone. Section ...



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## Annual variation in survival and reproduction of the ...

by MH Richards · 1995 · Cited by 64 — This suggests that primitively eusocial **sweat bees** maintain a variety of **reproductive** options, adjusting their social **behaviour** in response to...  
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University of Michigan

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by IR List — **Sweat bees** are small to medium-sized bees. They are most often brownish or ... nectarivore. **Foraging Behavior**; stores or caches food. What eats them and how do ...



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by KS Omufwoko · 2023 — As a result, most work in **sweat bees** has focused on the **behavioral** interactions and chemical signals experienced by adults within the nest.



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## OR397 Foraging gene expression patterns in eusocial ...

by D Awde · 2014 · Cited by 1 — Variation in **foraging behaviour** is one of the major hallmarks of caste differentiation in primitively eusocial **sweat bees**, such as *Lasioglossum laevis*...



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## Sweat Bees, Halictid Bees, Halictidae (Insecta: Hymenoptera

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## Predator recognition and evasive behavior by sweat bees ...

by WIT Weislo · 2003 · Cited by 17 — Predator recognition and evasive **behavior** by **sweat bees**, *Lasioglossum umbripenne* (Hymenoptera: Halictidae), in response to predation by ants,...



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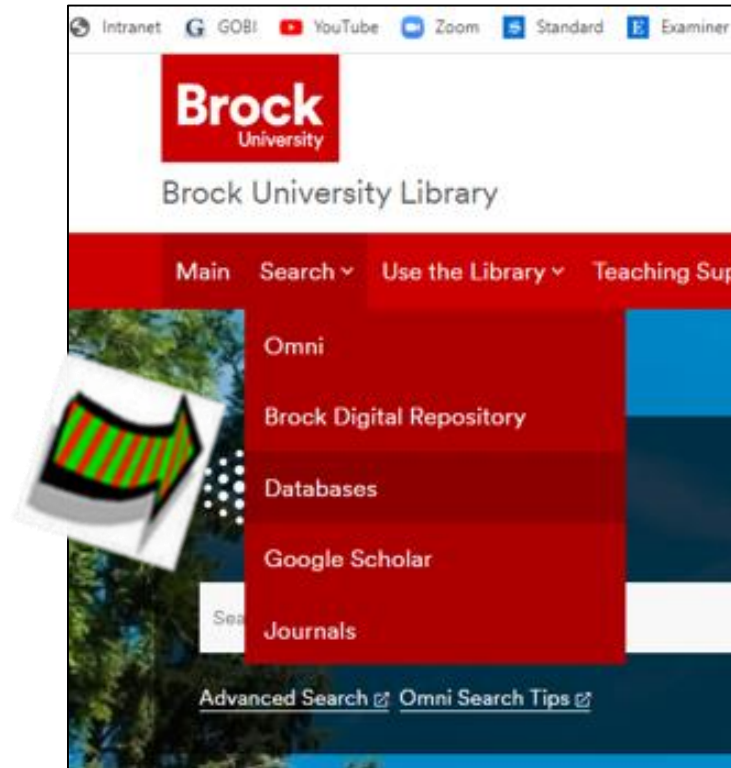
## Foraging gene expression patterns in queens, workers, ...

by DN Awde · Cited by 3 — The social **behaviour** of eusocial **sweat bees** may help us to understand intermediate stages in the evolution. 110 of **reproductive** division of ...



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An Insight to the Concept of **Eusociality** in Insects

DD Rawal - International Journal of Entomology Research, 2020 - papers.ssrn.com

... Transcriptome studies suggest that wasps are the oldest **eusocial** groups, while **bees** and ...

It is possible that they got same **genetic expression** due to similar environment. Most **eusocial** ...

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Genetic signatures of dominance hierarchies reveal conserved cis-regulatory and brain gene expression underlying aggression in a facultatively social **bee**

MA Steffen, SM Rehan - Genes, Brain and Behavior, 2020 - Wiley Online Library

... **eusocial** Hymenoptera. In the cichlid fish, Astatotilapia burtoni, **genetic expression overlap**

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Genetic components to worker sterility in the honey **bee**, Apis mellifera

AG Backx - 2011 - ir.lib.uwo.ca

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JA Colombo - Dominance Behavior: An Evolutive and Comparative ..., 2022 - Springer

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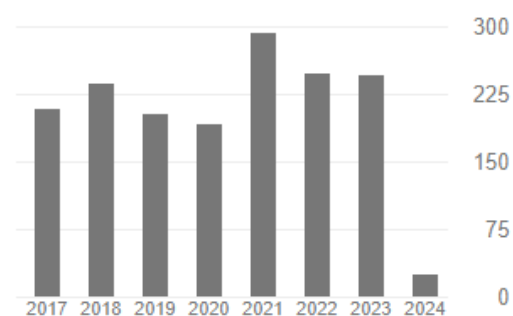
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[The database of the PREDICTS \(projecting responses of ecological diversity in changing terrestrial systems\) project](#)

LN Hudson, T Newbold, S Contu, SLL Hill, I Lysenko, A De Palma, ...  
Ecology and evolution 7 (1), 145-188

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2017

[Long-term changes in survival rates of lesser snow geese](#)

CM Francis, MH Richards, F Cooke, RF Rockwell  
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1992

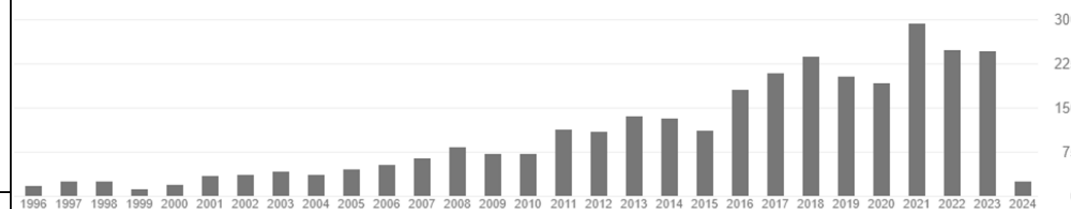
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SM Rehan, MH Richards  
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[Predicting bee community responses to land-use changes: Effects of geographic and taxonomic biases](#)

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Canadian Journal of Zoology  
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Individual differences in honey bee behavior enabled by plasticity in brain gene regulatory networks

Beryl M Jones, Vikyath D Rao, Tim Gernat, Tobias Jagla, Amy C Cash-Ahmed, Benjamin ER Rubin, Troy J Comi, Shounak Bhogale,...

2020, eLife - Article

Understanding the regulatory architecture of phenotypic variation is a fundamental goal in biology, but connections between gene regulatory network (GRN) activity and individual differences in behavior... [more](#)

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Peter R. Oxley, Lu Ji, Ingrid Fetter-Pruneda, Sean K. McKenzie, Cai Li, Haofu Hu, Guojie Zhang, Daniel J.C. Kronauer

2014, Current Biology - Article

Social insects are important models for social evolution and behavior. However, in many species, experimental c...  
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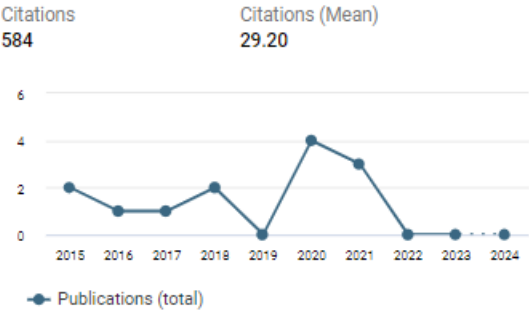
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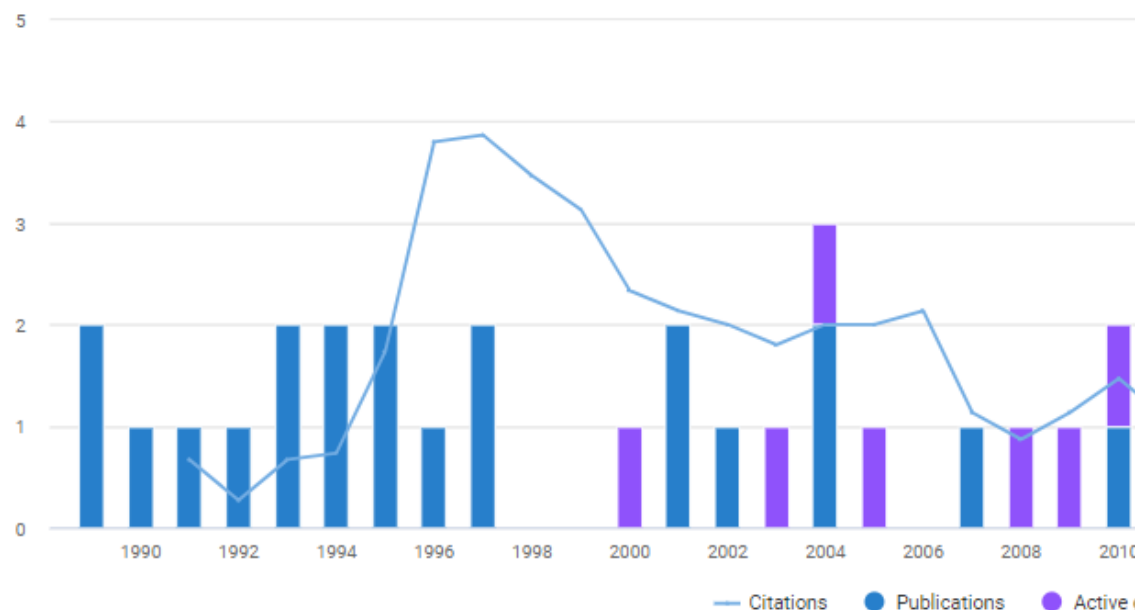
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David N. Awde, Adonis Skandalis, Miriam H. Richards

2021, Canadian Journal of Zoology - Article

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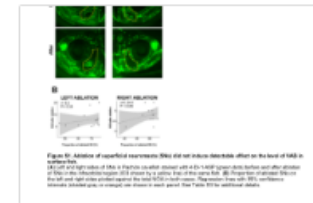
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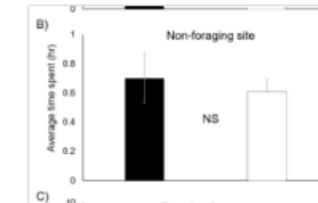
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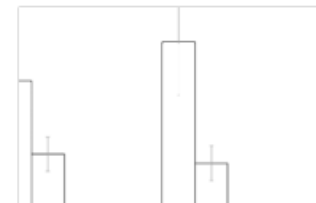
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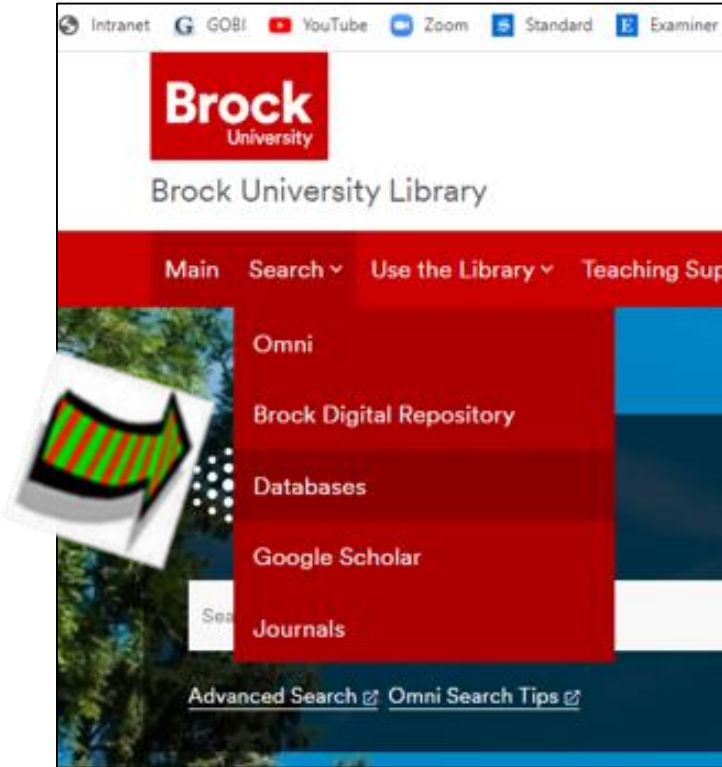


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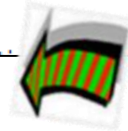
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A key characteristic of eusocial species is reproductive division of labour. Honey bee colonies typically have a single reproductive queen and thousands of sterile workers. Adult queens differ dramatically from workers in anatomy, physiology, behaviour and lifespan. Young female workers can activate their ovaries and initiate egg laying; these 'reproductive' workers differ from sterile workers ... [Show more](#)

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[Pankiw, T](#); [Huang, ZY](#); (...); [Robinson, GE](#)

Jul-aug 1998 | [JOURNAL OF INSECT PHYSIOLOGY](#) 44 (7-8) , pp.685-692

Synthetic queen mandibular gland pheromone (QMP) was applied to honey bee colonies to test two hypotheses: (i) QMP acts like a primer pheromone in the regulation of age-related division of labor, and (ii) this primer effect, if present, varies in three strains of workers that show **genetically**-based differences in their retinue attraction response to QMP (a pheromone releaser effect). Strains of ... [Show more](#)

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Volume: 16 Issue: 22 Page: 4837-4848  
DOI: [10.1111/j.1365-294X.2007.03545.x](#)

Published NOV 2007

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Abstract A key characteristic of eusocial species is reproductive division of labour. Honey bee colonies typically have a queen and thousands of sterile workers. Adult queens differ dramatically from workers in anatomy, physiology, and lifespan. Young female workers can activate their ovaries and initiate egg laying; these 'reproductive' workers differ from non-reproductive workers in anatomy, physiology, and behaviour. These differences, however, are on a much smaller scale

Keywords **Author Keywords:** caste; eusociality; genomics; longevity; microarrays; reproduction  
**Keywords Plus:** DIVISION-OF-LABOR; WORKER REPRODUCTION; JUVENILE-HORMONE; LIFE-SPAN; OVARY DEVELOPMENT; BEHAVIOR; EVOLUTIONARY; TELOMERES; VITELLOGENIN; QUEENS

Author Information Corresponding Address: [Grozinger, Christina M.](#) (corresponding author)  
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**Verb**

Scouring through thoroughly with desperation

Present participle for to eat, or feed on, grass or herbs

Present participle for to search unsystematically and untidily through something

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Scouring through thoroughly with desperation

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seeking   trawling   combing through   rummaging through

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ferreting   looking   delving   fossicking   combing   scavenging

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Linking pollen foraging of megachilid bees to their nest bacterial microbiota



Voulgari-Kokota, A; Ankenbrand, M.J; (...); Keller, A

Sep 2019 | Sep 2019 (Early Access) | ECOLOGY AND EVOLUTION 9 (18), pp.10788-10800

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Solitary bees build their nests by modifying the interior of natural cavities, and they provision them with food by importing collected pollen. As a result, the microbiota of the solitary bee nests may be highly dependent on introduced materials. In order to investigate how the collected pollen is associated with the nest microbiota, we used metabarcoding of the ITS2 rDNA and the 16S rDNA to si

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1 Limited social plasticity in the socially polymorphic sweat bee *Lasioglossum calceatum*

Davison, PJ and Field, J

Mar 2018 | BEHAVIORAL ECOLOGY AND SOCIOBIOLOGY 72 (3)

Eusociality is characterised by a reproductive division of labour, where some individuals forgo direct reproduction to instead help raise kin. Socially polymorphic sweat bees are ideal models for addressing the mechanisms underlying the transition from solitary living to eusociality, because different individuals in the same species can express eitl ... [Show more](#)

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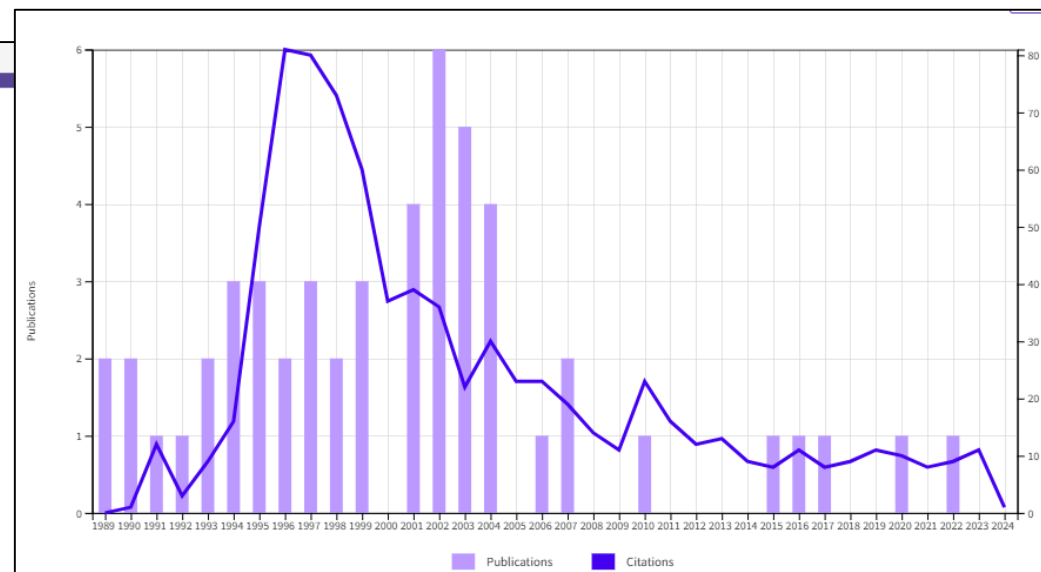
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deHaan, JL ; Maretzki, J. ; (...); Richards, M.H

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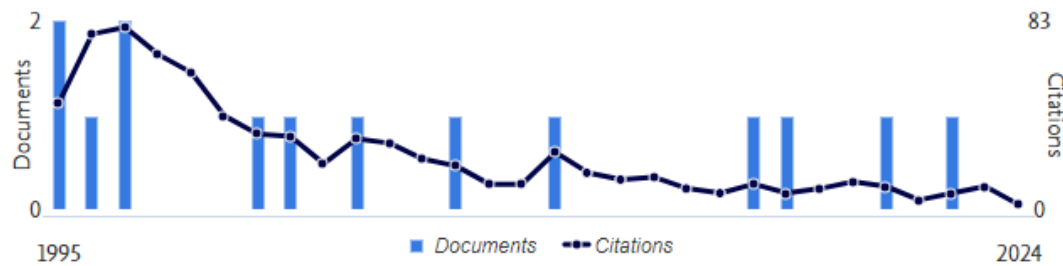
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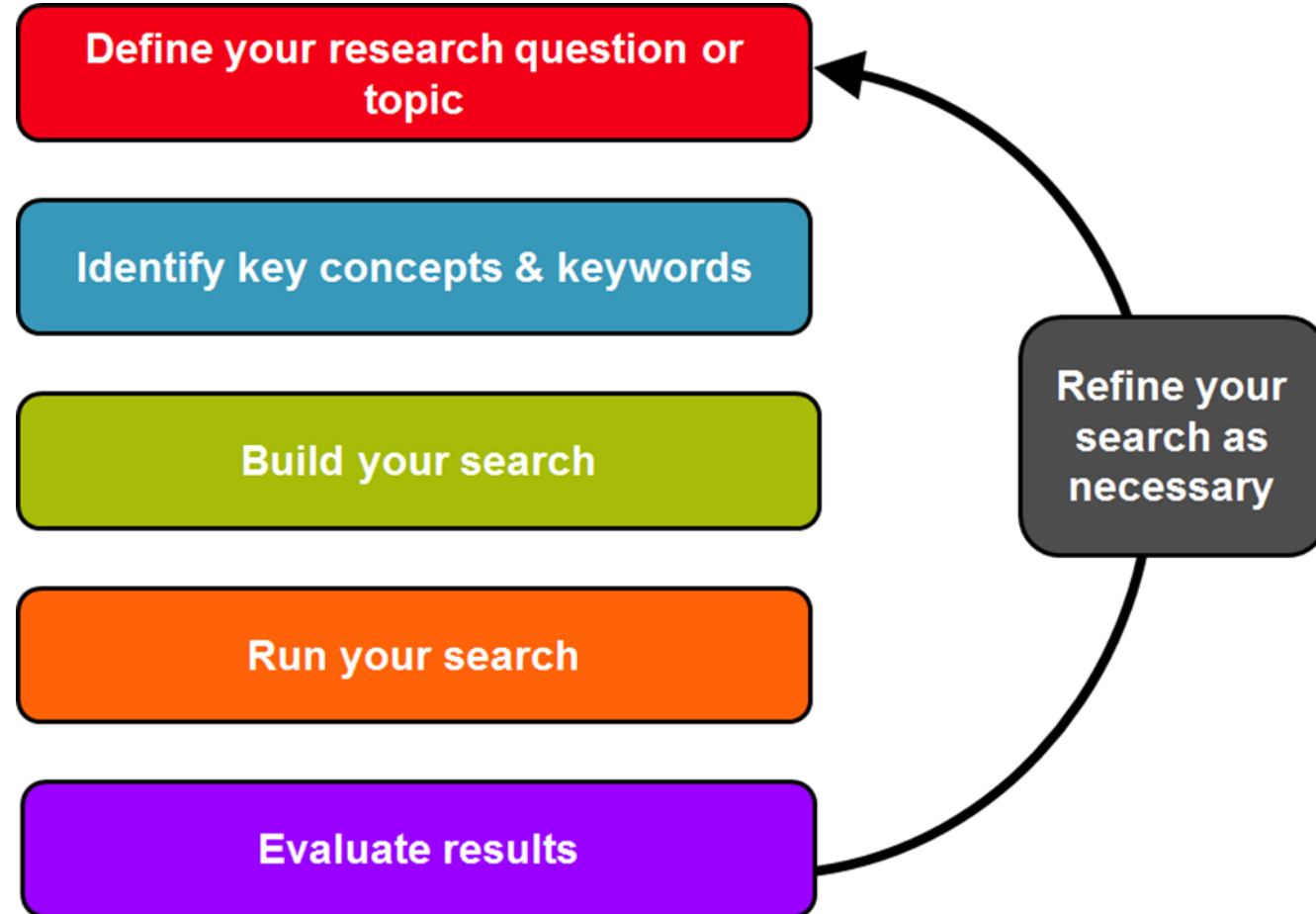
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Awde, D. N., Skandalis, A., & Richards, M. H. (2022). *Foraging* gene expression patterns in queens, workers, and males in a eusocial insect. *Canadian Journal of Zoology*, 100(1), 1-9. <https://doi.org/10.1139/cjz-2021-0124>

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# Foraging gene expression patterns in queens, workers, and males in a eusocial insect

David N. Awde, Adonis Skandalis, and Miriam H. Richards

**Abstract:** Reproductive division of labour is based on biased expression of complementary parental behaviours, brood production (egg-laying) by queens and brood care (in particular, brood-provisioning) by workers. In many social insect species, queens provision brood when establishing colonies at the beginning of a breeding season and reproductive division of labour begins with the emergence of workers. In many social insect species, the expression of *foraging* (*for*) mRNA is associated with the intensity of foraging behaviour and therefore brood-provisioning. However, only two studies have compared queen and worker *for* expression levels and neither accounted for transcript splice variation. In this study, we compare the expression level of the *for-α* transcript variant across four life stages of the queen caste, two behavioural groups of workers, and males of a eusocial sweat bee *Lasioglossum laevisimum* (Smith, 1853). Foundresses collected prior to the onset of the foraging season and males had the highest *for-α* expression levels. All active (post-hibernatory) queens and workers had similar *for-α* expression levels independent of behaviour. These results suggest that the *for* gene in *L. laevisimum* acts as a primer before foraging activity and that caste-specific expression patterns correlate with the timing of foraging activity in queens and workers.

**Key words:** *foraging* gene, *Lasioglossum laevisimum*, RT-qPCR, Halictinae, sweat bee, ovarian ground-plan hypothesis.

**Résumé :** La division du travail reproducteur repose sur une expression biaisée de comportements parentaux complémentaires, la production de couvées (ponte) par les reines et le soin des couvées (leur approvisionnement, en particulier) par les ouvrières. Chez de nombreuses espèces d'insectes sociaux, les reines approvisionnent les colonies au début de la saison de reproduction et la division du travail reproducteur commence avec l'émergence des ouvrières. Chez de nombreuses espèces d'insectes sociaux, l'expression d'ARNm codant pour la protéine *foraging* (*for*) est associée à l'intensité du comportement de butinage et, donc, à l'approvisionnement des colonies. Cependant, seules deux études ont comparé les degrés d'expression *for* de reines et d'ouvrières et ni l'une ni l'autre n'a tenu compte de la variation de l'épissage des transcrits. Nous comparons le degré d'expression du variant *for-α* du cycle biologique de la caste des reines, deux groupes comportementaux de *Lasioglossum laevisimum* (Smith, 1853), une espèce eusociale. Les femelles fondatrices collectées avant le début de la saison de butinage et les mâles présentent les degrés les plus élevés d'expression *for-α*. Toutes les reines et ouvrières actives (post-hibernation) présentent des degrés d'expression *for-α* semblables indépendamment du comportement. Ces résultats indiquent que le gène *for* chez *L. laevisimum* joue un rôle d'amorçage avant l'activité de butinage et que les motifs d'expression selon la caste sont corrélés au moment de l'activité de butinage chez les reines et les ouvrières. [Traduit par la Rédaction]

**Mots-clés :** gène de butinage, *Lasioglossum laevisimum*, PCR quantitative en temps réel, halictinés, halicte très lisse, hypothèse ovarienne de la division du travail.

## Introduction

Eusocial insects are characterized by cooperative brood care, overlapping generations, and a reproductive division of labour between queens and workers (Batra 1966; Wilson 1971; Michener 1974). Reproductive division of labour is based on biased expression of two complementary types of parental behaviour, namely brood production (egg-laying) and brood care (in particular, brood-provisioning) (Wilson 1971; Michener 1974; Royle et al. 2012). A few eusocial species with morphological castes, such as honeybees, exhibit such complete reproductive division of labour that there is virtually no overlap in the parental repertoires of queens and workers: queens specialize in laying eggs and provide no brood care, whereas workers specialize in brood

care and almost never lay eggs. However, reproductive division of labour is more nuanced in many eusocial lineages, including some typically described as "highly eusocial". In many social insect lineages, including semi-claustral ants, bumblebees, sweat bees, and paper wasps, queens construct nests and forage to provision their first brood. Reproductive division of labour actually begins with the emergence of workers, with queens switching to egg production and workers specializing on care of the queen's brood. In many cases, workers, especially those produced later in the colony cycle, also become reproductive, mating and laying eggs (Wcislo and Fewell 2017).

Eusocial hymenopterans evolved from solitary ancestors with reproductive behaviour like that of living solitary species, in which mothers raise their own offspring with no help from other individuals.

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- Brock Biological Science Library Research Guide
- Databases – lots of them
- Research Metrics
- [Citation Management tools](#)
- Where, how and when to get help!

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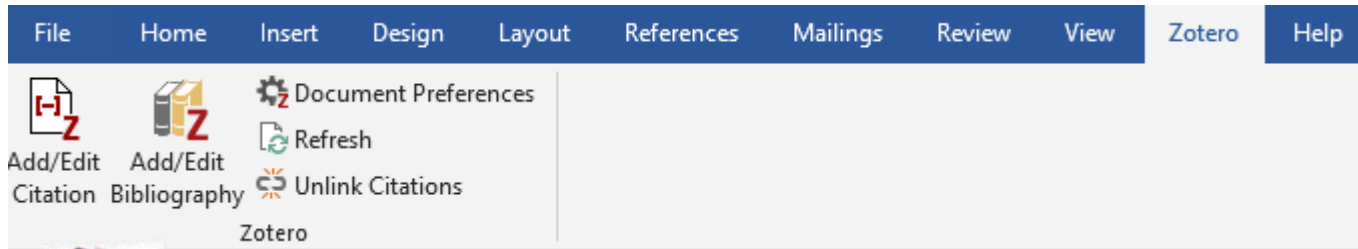
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KINE 4P70 Paper

Ian D Gordon

Ben Johnson's Doping Scandal as a Pivotal Moment in Canadian Sports History:  
Allegations Against a Black Sprinter from Scarborough



Researcher and scholar Ian Ritchie (2012) commented that "No other single issue in sport... (p. 410). This comment speaks to importance...

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Ritchie, I. (2012). The Use of Performance-enhancing Substances in the Olympic Games: A Critical History. In: Lenskyj, H.J., Wagg, S. (eds) *The Palgrave Handbook of Olympic Studies* (pp. 410-429. Palgrave Macmillan, London.  
[https://doi.org/10.1057/9780230367463\\_26](https://doi.org/10.1057/9780230367463_26)

# Library Seminar Agenda

- What's new in the Library
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- Databases – lots of them
- Research Metrics
- Citation Management tools
- [Where, how and when to get help!](#)

Have you met up with the Brock Library Data Librarian to seek data sources?





Brock University Library



Nicole Stradiotto, Data Services Librarian

[nstradiotto@brocku.ca](mailto:nstradiotto@brocku.ca)

<https://brocku.ca/library/rdm/>

## Research Data Management

Planning, managing, and maintaining data that is collected or created through research is a critical part of the research process. The Library provides expertise, support and access to resources that enable researchers to manage their research data in effective and efficient ways.

### Brock University Research Data Management Strategy

The Government of Canada's Tri-Agency Research Data Management Policy requires Brock University, as an institution that administers CIHR, NSERC, or SSHRC funds, to develop and publish an RDM Strategy on the Brock University website by March 1, 2023. Brock University followed a [consultative and inclusive process](#) to develop this Strategy.

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### Tri-Agency Research Data Management Policy

The agencies believe that research data collected through the use of public funds should be responsibly and securely managed and be, where ethical, legal and commercial obligations allow, available for reuse by others. To this end, the agencies support the FAIR (Findable, Accessible, Interoperable, and Reusable) guiding principles for research data management and stewardship. ~Government of Canada

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### Library Support

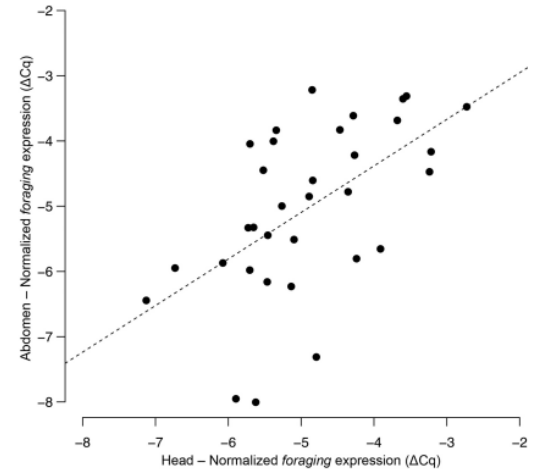
Planning, managing, and maintaining data that is collected or created through research is a critical part of the research process. This guide provides an introduction to the key questions you need to answer about your data, links to other resources for more information, and details about data hosting options.

[GO TO LIBRARY GUIDE](#) ➤

How do you anticipate visualizing your data?



Fig. 3. Comparisons of head and abdomen *for-α* expression levels. Each point represents head and abdomen measurements in a single individual. Foraging-*α* expression levels were similar in head and abdomen (paired t test,  $t_{1212} = 0.64$ ,  $p = 0.53$ ).



Female Categories

- Foundresses
- Queens
- Gynes
- Workers
- Males

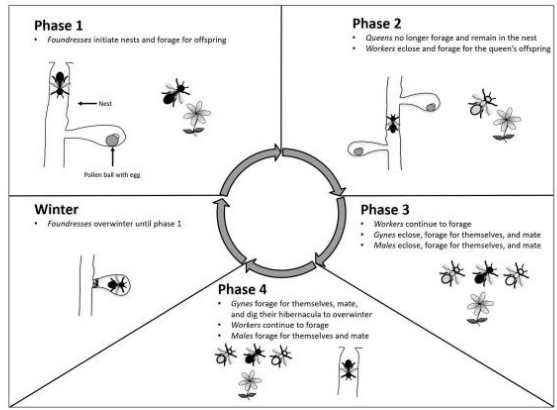
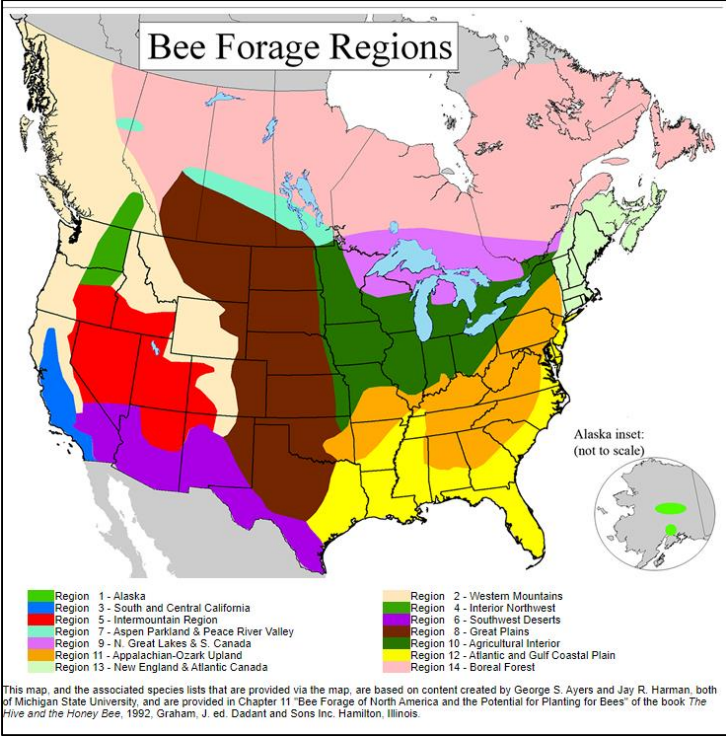


Table 2. Terminology used to categorize female and male *Lasiglossus laevisimus* collected throughout the breeding seasons of 3 years (2013–2015).

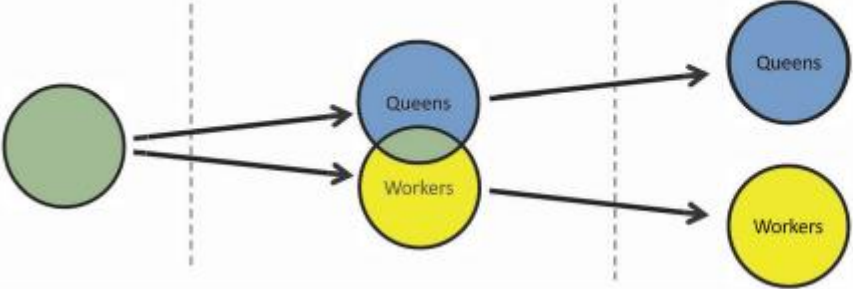
| Caste or sex | Bee category             | Foraging or provisioning phenotype | Collection method                          | Collection phase             |
|--------------|--------------------------|------------------------------------|--------------------------------------------|------------------------------|
| Queen        | Gynes                    | Possible foragers                  | Nest excavations                           | Phases 3 and 4               |
|              | Early-spring foundresses | Pre-provisioning                   | Nest excavations; found in hibernacula     | Early spring, before phase 1 |
|              | Spring foundresses       | Actively provisioning              | Netted while flying around the aggregation | Phase 1                      |
|              | Summer queens            | Post-provisioning                  | Nest excavations                           | Phases 2 and 3               |
| Worker       | Flying workers           | Actively provisioning              | Netted while flying around the aggregation | Phases 2 and 3               |
|              | Nest workers             | Not provisioning                   | Nest excavations                           | Phases 2 and 3               |
| Males        | Foragers                 |                                    | Netted while flying around the aggregation | Phases 2 and 3               |

Note: Within the queen caste, categories are arranged in order of increasing age.



This map, and the associated species lists that are provided via the map, are based on content created by George S. Ayers and Jay R. Harman, both of Michigan State University, and are provided in Chapter 11 "Bee Forage of North America and the Potential for Planting for Bees" of the book *The Hive and the Honey Bee*, 1992, Graham, J. ed. Dadant and Sons Inc. Hamilton, Illinois.

1. Solitary ancestor
2. Eusocial with solitary nest-founding (Both queens and workers forage at some point)
3. Eusocial with swarm-founding (Only workers forage)



- Representative of an individual or individuals in a colony
- Egg-laying behaviour and its underlying molecular network
- Foraging behaviour and its underlying molecular network
- Both egg-laying and foraging behaviours, and their underlying molecular network
- Evolutionary time



<https://brocku.ca/library/dsl/>

## Digital Scholarship Lab

### We Can Help You With:

Managing Your Research Data

Developing Your Digital Project

Finding And Using Data

Visualizing Your Data

Mapping Your Data (GIS)

Processing Your Data (HPC)



The Digital Scholarship Lab brings together a variety of services and expertise that support digital research initiatives happening across Brock University.

How do you anticipate copyrighting, licensing, sharing... your data?



## 1. Governments

- Establish new laws or policies for clear, accessible health information.
- Provide more funding for exploring effectiveness of health literacy and types of communicative health literacy interventions associated with patient-provider communications.
- Promote evidence-based resources.



## 2. Businesses

- Address both opportunities and challenges of medical digital technology, tools, and platforms while integrating patient feedback as users (medical apps, e-consultations).
- Apply health literacy and clear communication principles to all digital technology.



## 3. Organizations

- Provide quality, equitable, and accessible care and services.
- Improve trust in local communities by local health organizations through the delivery of prompt, clear, and culturally appropriate communications.



# IMPLICATIONS FOR HEALTH BEHAVIOR OR POLICY

Let's put the pieces together for health and well-being efforts. We recommend the following actions to further develop health literacy.

Vamos, Vine, Alaimo & Gordon

## 4. Physicians

- Train physicians while recognizing competing priorities for their time.
- Integrate consistent health literacy training via medical school curricula and continuing professional development opportunities.



## 5. Patients

- Educate the public and bring health literacy into schools beginning at an early age.
- Encourage patients and families to better understand their health conditions.
- AskMe3 educational program to gain a better understanding of what actions to take.



## 6. Researchers

- Measure patient health literacy early in clinical experience.
- Use validated tools
  - Health Literacy Questionnaire
  - HLS19-COM-P
- Better understand patients' ability to engage with health information and services.



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## Defining Cool Climate Research: A Bibliographic Analysis

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1 Occurrence of Dental Disorders in Dogs

Sauer, L; Oliveira, NGSG; (...); Carlos, RSA

Oct 21 2018 | ACTA SCIENTIAE VETERINARIAE 46

Background: The anatomy of the canine oral cavity and its variations should be understood to facilitate clinical and surgical approaches. Several conditions can be identified during inspection of the oral cavity, including persistent deciduous teeth, enamel hypoplasia, gingival retraction, tooth abrasion and mobility, absence of dental elements, and periodontal disease. The aim of the present s ... Show more

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Sent on Monday, 2023 October 02

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PubMed Results

Items 1-48 of 48 ([Display the 48 citations in PubMed](#))

1. [Adolescents' Depression and Anxiety Symptoms During the COVID-19 Pandemic: Longitudinal Evidence From COMPASS.](#)  
Gohari MR, Patte KA, Ferro MA, Haddad S, Wade TJ, Bélanger RE, Romano I, Leatherdale ST.  
J Adolesc Health. 2023 Sep 28;S1054-139X(23)00390-7. doi: 10.1016/j.jadohealth.2023.07.024. Online ahead of print.  
PMID: 37777949
2. [Strengthening Community Roots: Anchoring Newcomers in Wellness and Sustainability \(SCORE!\): A protocol for the co-design and evaluation of a healthy active living program among a newcomer community in Canada.](#)  
Wahi G, Kandasamy S, Bangdiwala SI, Baumann A, Crea-Arsenio M, Desai D, DiLiberto D, Georgiades K, Jackson-Best F, Kwan M, Montague P, Newbold KB, Sherifali D, Sim A, de Souza RJ, Anand SS; SCORE! Research team.  
PLoS One. 2023 Sep 28;18(9):e0288851. doi: 10.1371/journal.pone.0288851. eCollection 2023.  
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About Glenn

**Introduction**  
I am a Professor of Biological Sciences. My primary research interests include the evolutionary physiology of thermoregulation and mechanistic responses to extreme environments in animals. I maintain an active research lab of early career scientists and interact with an array of scientists around the globe. We study thermal biology, physiology, ecology, and evolution, all while employing a range of integrative and non-invasive approaches. Many of my research approaches incorporate behavioural and computational approaches to the understanding of biology. Keywords: Thermoregulatory Physiology, Temperature Adaptations, Evolutionary Physiology, Neuroethology

**Disciplines**  
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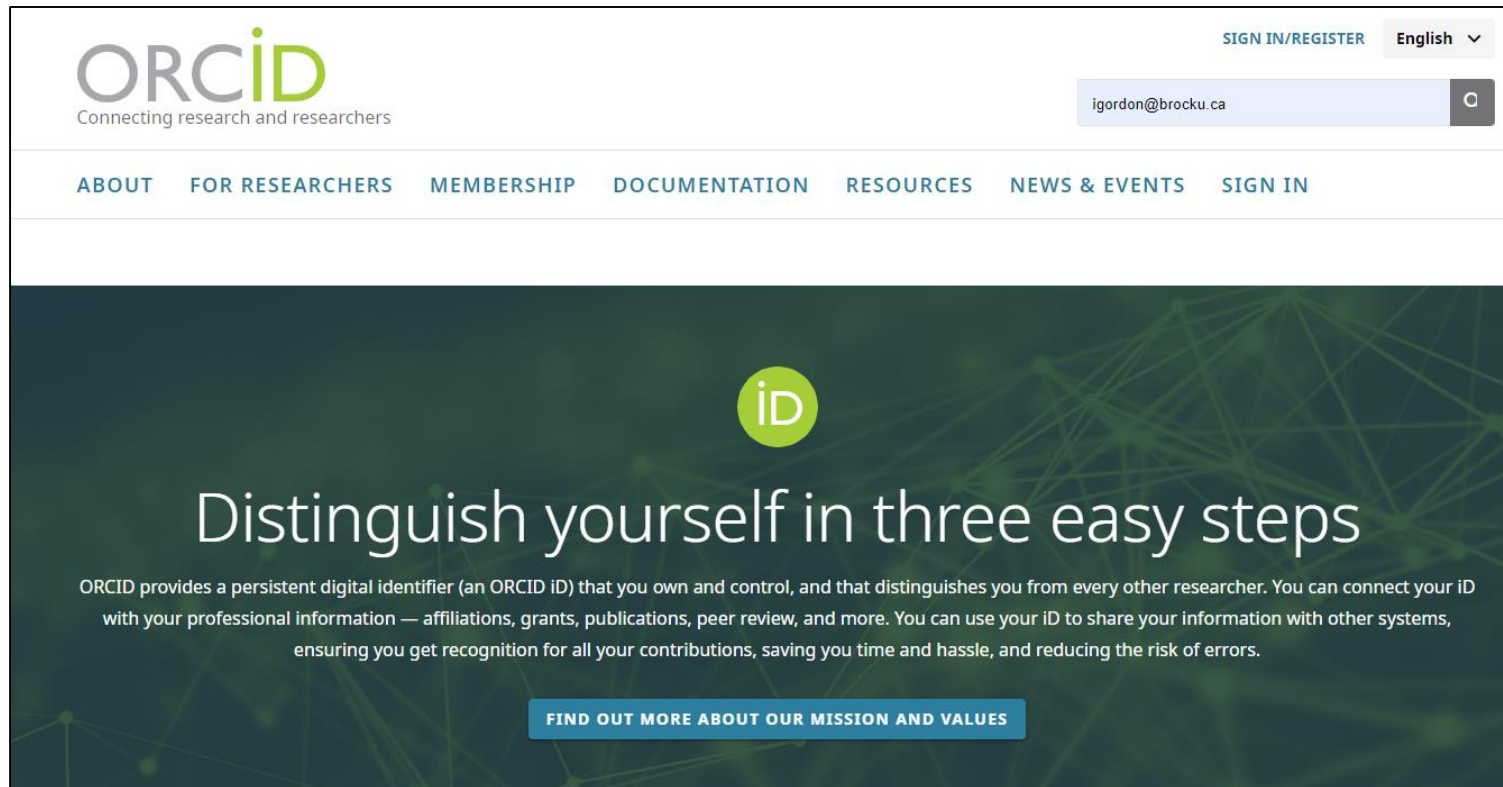
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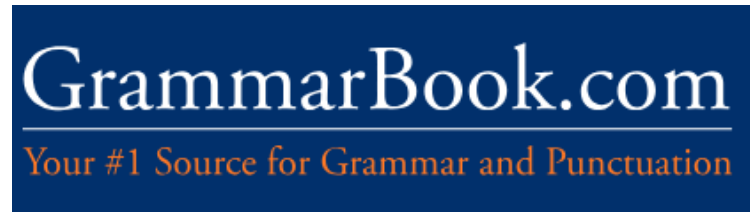
ORCID provides a persistent digital identifier (an ORCID iD) that you own and control, and that distinguishes you from every other researcher. You can connect your iD with your professional information — affiliations, grants, publications, peer review, and more. You can use your iD to share your information with other systems, ensuring you get recognition for all your contributions, saving you time and hassle, and reducing the risk of errors.

FIND OUT MORE ABOUT OUR MISSION AND VALUES

Have you used any AI-assisted software?



Academic Phrasebank





ChatGPT three top qualitative research themes found in Erin K. Sharpe's 10 most highest cited papers to date.

#### Children's Outdoor Play:

- **Discourses of Risk:** The analysis highlights discourses of risk in children's outdoor play. The focus on close parental supervision and an idealized childhood that is perceived as safer.
- **Nostalgic Discourse:** The feeling that wholesome outdoor play has been reclaimed contributes to discourses about who the ideal childhood is for.
- **Socioeconomic Disparities:** The analysis highlights how children face daily risks, while V... safer environments, affecting th...

#### Organizational Capacity in Grassroots Recreation Organizations:

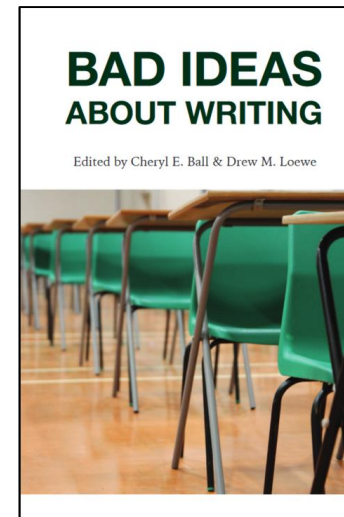
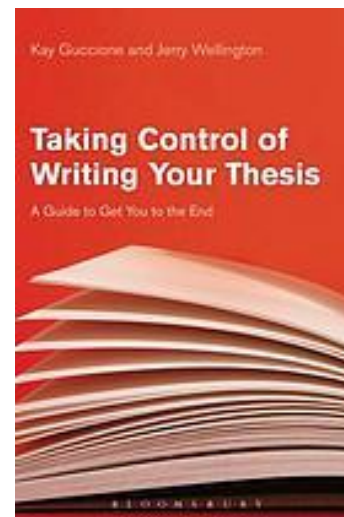
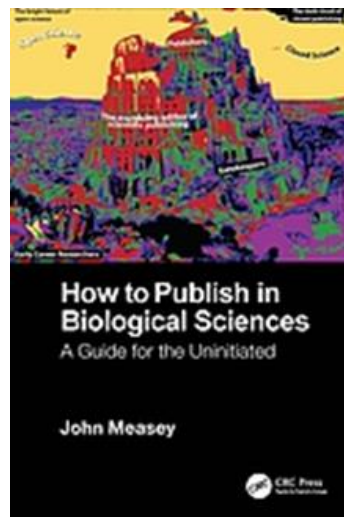
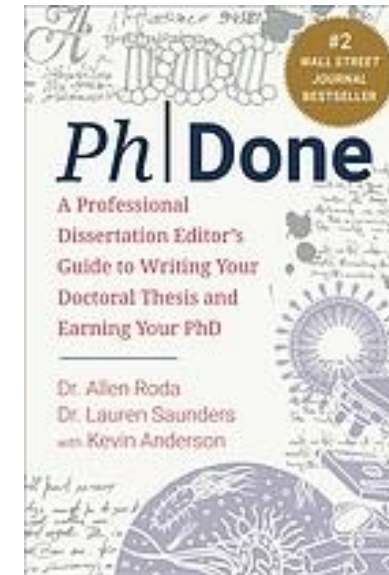
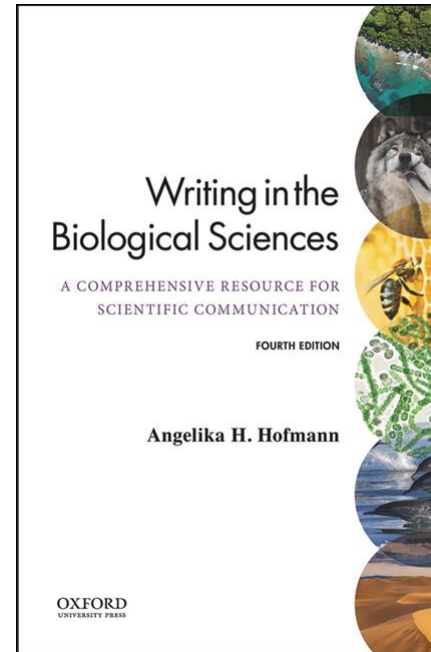
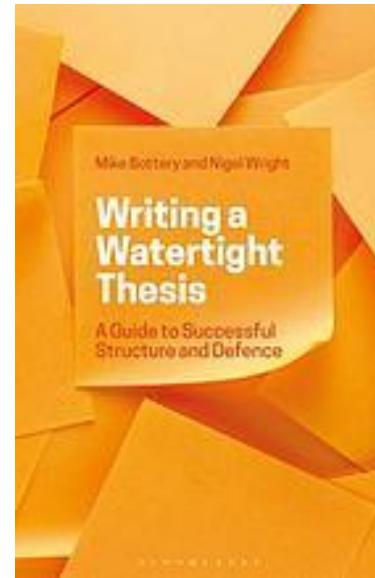
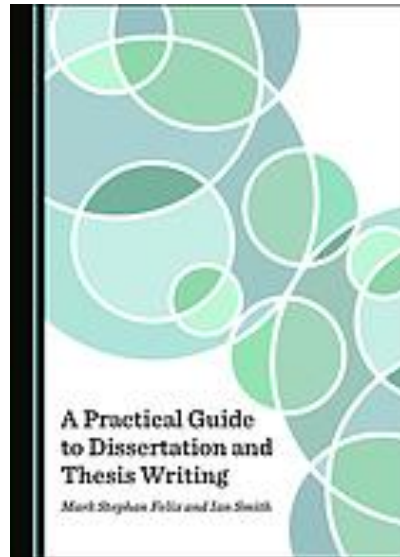
- **Impact of Organizational Capacity:** The study explores how organizational capacity affects the quality of experience in grassroots recreation organizations.
- **Shortages in Human Capital:** While social capital is mobilized, there are significant shortages of human capital, raising concerns about potential disenfranchisement of volunteers due to a lack of professional competencies.

#### Community-Based Youth Centers:

- **Discursive Tension:** Youth centers are seen as operating in a discursive tension between being a place for positive change (perceived by organizational bodies) and a place for leisure (perceived by youth).
- **Program Logics and Success Measures:** The study examines how discourses influence the program logics, measures of success, and constructions of youthful subjectivities within youth centers.
- **Youth Negotiation:** The research explores how young people negotiate these discourses, shedding light on their perspectives and experiences within the context of youth centers.



Have you used any writing resources?

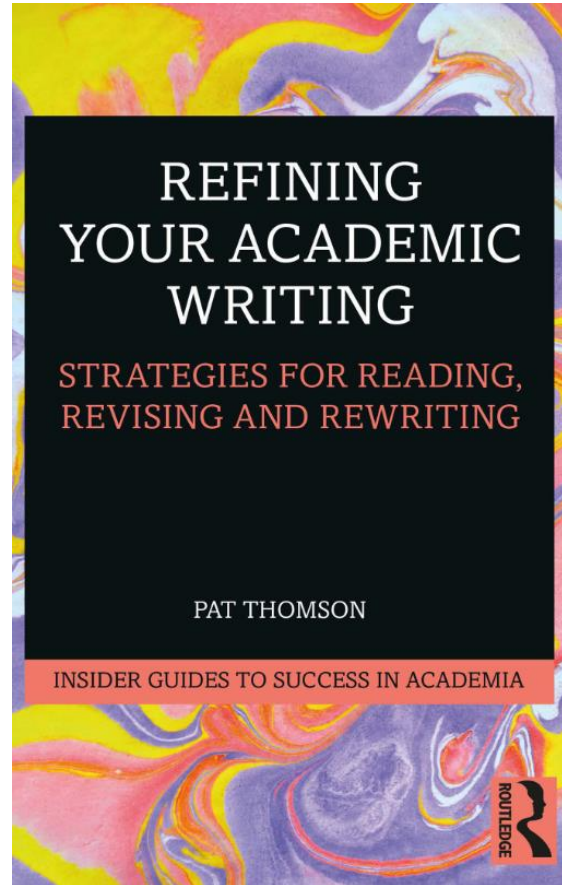
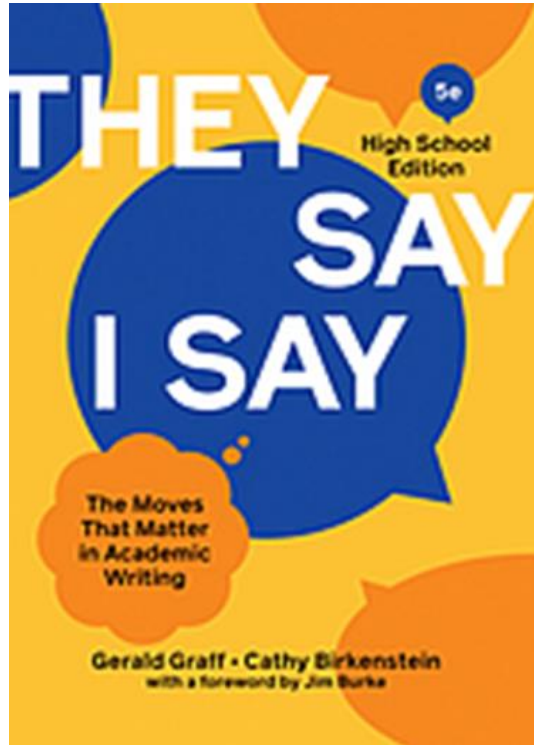


## **BAD IDEAS ABOUT STYLE, USAGE, AND GRAMMAR**

|                                                                                        |     |
|----------------------------------------------------------------------------------------|-----|
| Strunk and White Set the Standard<br><i>Laura Lisabeth</i>                             | 117 |
| Good Writers Always Follow My Rules<br><i>Monique Dufour and Jennifer Ahern-Dodson</i> | 121 |
| Writers Must Develop a Strong, Original Voice<br><i>Patrick Thomas</i>                 | 126 |
| Leave Yourself Out of Your Writing<br><i>Rodrigo Joseph Rodríguez</i>                  | 131 |
| Response: Never Use “I”<br><i>Kimberly N. Parker</i>                                   | 134 |
| The Passive Voice Should be Avoided<br><i>Collin Gifford Brooke</i>                    | 139 |
| Teaching Grammar Improves Writing<br><i>Patricia A. Dunn</i>                           | 144 |
| Good Writers Must Know Grammatical Terminology<br><i>Hannah J. Rule</i>                | 150 |
| Grammar Should be Taught Separately as Rules to Learn<br><i>Muriel Harris</i>          | 155 |

## **BAD IDEAS ABOUT WHO GOOD WRITERS ARE**

|                                                                                        |
|----------------------------------------------------------------------------------------|
| Writers are Mythical, Magical, and Damaged<br><i>Teri Holbrook and Melanie Hundley</i> |
| You Need My Credentials to be a Writer<br><i>Ronald Clark Brooks</i>                   |
| Only Geniuses can be Writers<br><i>Dustin Edwards and Enrique Paz</i>                  |
| Some People are Just Born Good Writers<br><i>Jill Parrott</i>                          |
| Failure is Not an Option<br><i>Allison D. Carr</i>                                     |
| There is One Correct Way of Writing and Speaking<br><i>Anjali Pattanayak</i>           |
| African American Language is not Good English<br><i>Jennifer M. Cunningham</i>         |
| Official American English is Best<br><i>Steven Alvarez</i>                             |
| Writer’s Block Just Happens to People<br><i>Geoffrey V. Carter</i>                     |
| Strong Writing and Writers Don’t Need Revision<br><i>Laura Giovanelli</i>              |
| The More Writing Process, the Better<br><i>Jimmy Butts</i>                             |







## 36. Authorship: when to use a personal pronoun, 'I/we'

Writing is, at its very core, a form of self-expression,<sup>11</sup> an expression of your thinking. Yet teachers of composition

### (3) Concluding well

Conclusions leave the reader with a strong impression. The conclusion generally requires bigging up what you've done. You have to name and claim your original contributions. You have to tell readers what they now know, thanks to your paper. Even if you don't feel like it, you

have to write the conclusion. You have to have learnt. The reader has to have learnt. The reader has to have learnt the topic, as John Warner

The conclusion is the place to be a bit assertive, to show everything, but you can't be timid and say you didn't do that yet. It is unimportant. If you are concluding with sufficient mon up a last bit of

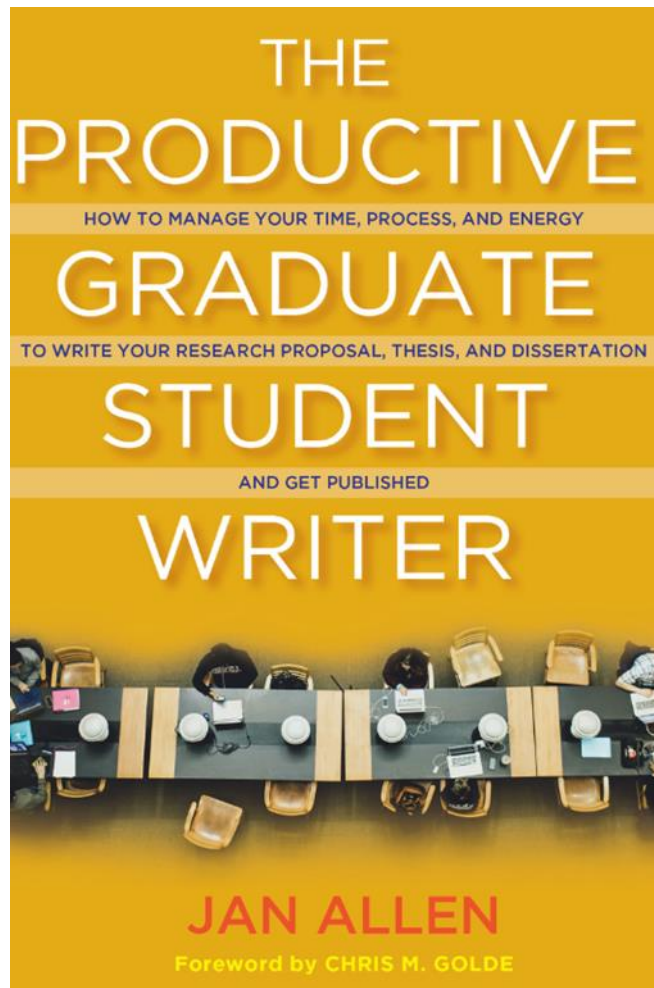
### (3) Quotomania

I am not sure who invented the term, but it describes the excessive use of quotations. While many writers often suffer from quotomania, experts on quotations. Expert scholars steal points from others' work. They use quotations when there is no better way of explaining something when they want to give a flavour of a particularly scholarly 'voice' in addition to their own. Overquoting puts the reader off. An encounter with slabs of over-documented, excessively exemplified prose is generally monotonous, dull and hard to read (see Figure 9.5). Unkind readers may assume that the writer has no ideas of their own, and that they are incapable of anything but derivative thought.

### (2) Vary sentence length

Academic sentences are often lengthy. The writer makes a point and then adds multiple caveats and embellishments. An academic sentence can go up to 60, even 70 words without flinching.

Academic writers can reasonably expect academic colleagues to stay upright at the occasional lengthy stretch of syntax. They won't rub their eyes and nod off at their desks, even though they might sigh a bit. But too many words and thoughts in a sentence leave the average scholarly reader confused. They can't remember the main point they are meant to be following. The reader-asleep-or-confused problem is exacerbated by nothing *but* long sentences: 70 words followed by another 70 words, followed by . . . halfway through and it's time for a cup of tea.



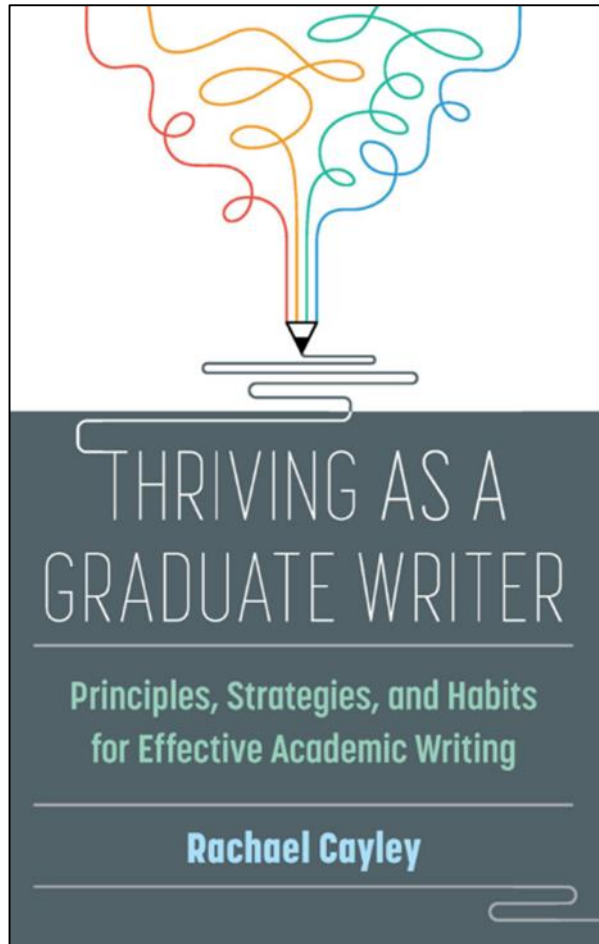
## 33

### Writing a Dissertation

*Coming up against a brick wall is what writing often feels like. You work and you work and you work and you work. And for months or years on end, you're just a total dray horse, and then you finally finish something, and the next day you look at it and you think, "How did that get there?"*

—Deborah Eisenberg

If you are ready to begin your research and write your dissertation, then congratulations! You likely have successfully completed your course work. Perhaps you have passed a first- or second-year exam (sometimes referred to as the Q or qualifying exam). Your adviser and graduate committee have approved your proposal (also called a prospectus, usually in the humanities), and you have successfully completed the general or preliminary exam, usually at the end of the third or fourth year of a doctoral program. At the University of Tennessee it's called the comprehensive exam, at Columbia University it's the MPhil exam, at Cornell University it's the A Exam, and at Northwestern University it's the qualifying exam. Regardless of the name of the exam, determine when your adviser expects you to have completed it. Not everyone passes on the first attempt,



## Writing in Graduate School: Why It Feels So Hard

"I feel like I should already know how to write."

"I feel like my writing difficulties mean I don't belong here."

"I feel like I'm alone in my writing struggles."

"I feel like academic writing can't be done well."

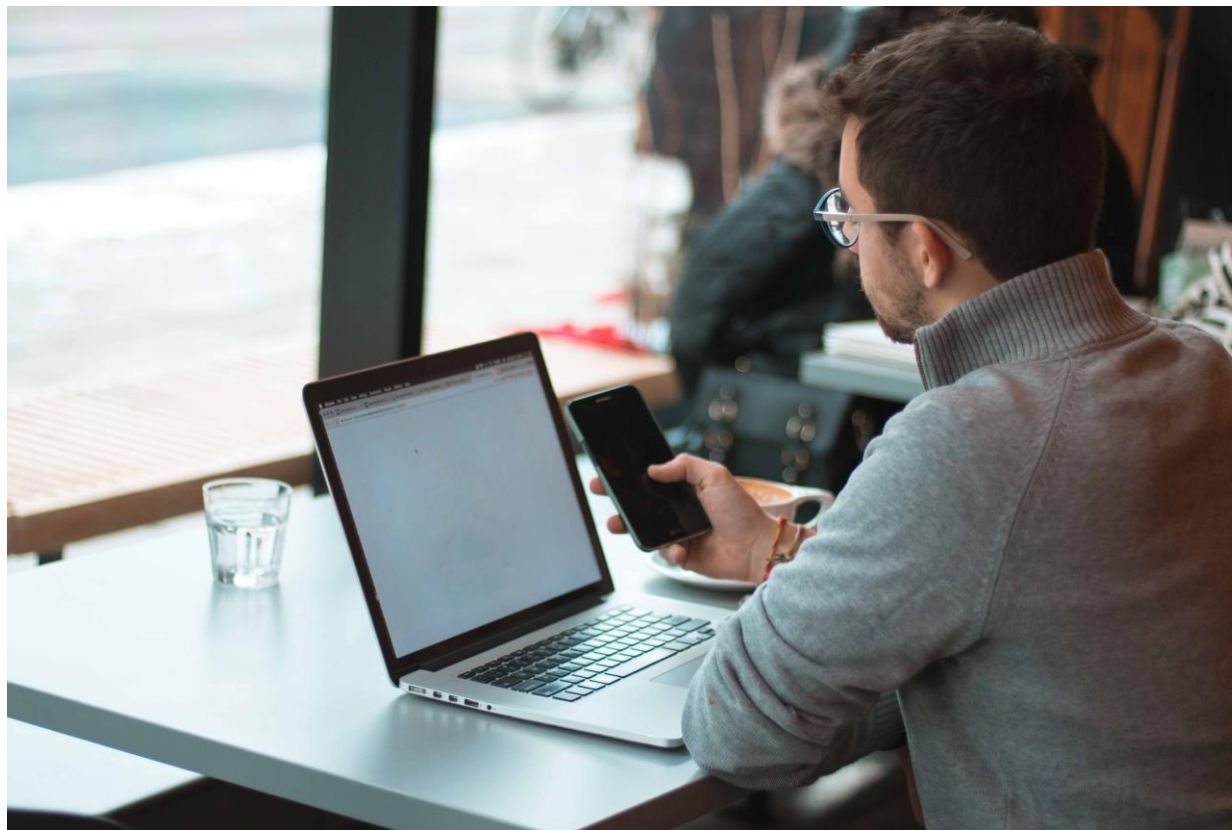


The information literate person can:



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<https://aau.ac.ae/en/blog/ten-signs-to-know-if-you-are-information-literate>



Man sitting near table with laptop photo  
by [Joseph Frank](#) on [Unsplash](#)

# Where can I get help with seeking information?

Data visualization, Daniel Brett, Digital Scholarship Lab  
<https://brocku.ca/library/dsl/> email [dsl@brocku.ca](mailto:dsl@brocku.ca)

Research Data Management, Nicole Stradiotto  
<https://brocku.ca/library/dsl/> email [nstradiotto@brocku.ca](mailto:nstradiotto@brocku.ca)

GIS, Mapping..., Map, Data & GIS Library  
<https://brocku.ca/library/mdgl/> email [maplib@brocku.ca](mailto:maplib@brocku.ca)

Research Lifecycle, Denise Smith  
<https://brocku.ca/library/publishing-support/> email  
[dsmith@brocku.ca](mailto:dsmith@brocku.ca)

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<https://researchguides.library.brocku.ca/systematicreviews>

Brock Library Research Guides

<https://brocku.ca/library/>

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[libhelp@brocku.ca](mailto:libhelp@brocku.ca)

Ask Us Chat service

<https://brocku.ca/library/chat/>



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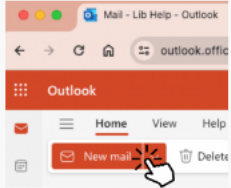
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| 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 25 | 26 | 27 | 28 | 29 |    |    |

## 3. Select Time:

Tuesday, February 6, 2024

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3:30pm

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<https://www.ala.org/acrl/standards/ilframework>





Ian Gordon

Teaching & Learning Librarian  
[igordon@brocku.ca](mailto:igordon@brocku.ca)